

MATRIX Classification- Compost classification is performed by means of a statistical multi-array using actual analytical test results. This is one of the only means to determine what a compost is best used for. The array scores the goodness of fit or “match” within a best use category. There are 6 types of use recognized. The minimum level score to meet any category is 75%. Multiple category listings are possible. Scores <75% are registered as Quality Control composts. Please request separate information for this.

CATEGORY or Grade	SIGNIFICANCE OF CATEGORY	Testing typically required for
<i>Nutrient (fertilizer)</i>	high analysis product, somewhat unstable useful for field application	N-P-K moisture pH
<i>Garden Grade</i>	moderate analysis with stable traits and no pathogens used at fairly high rates safely in gardens and as a blend for other mixes.	OM, stability nutrients
<i>Potting Mix Grade</i>	High porosity very stable with moderate available nutrients for starting seedlings	salinity, nutrients stability
<i>Container Mix Grade</i>	More dense but well drained, moderately stable and low-salinity for use in large pots	density, drainage, stability salinity
<i>Top-Soil Replacement</i>	Dense, very stable, low salinity and low OM content useful for soil replacing	density, salinity stability
<i>Mulch Grade</i>	Very course, low nutrient low pH and high CN used as soil cover	CN, OM, pH, salinity

COMPOST ANALYTICAL PROCEDURES

Physical Parameters	Units	METHOD REFERENCE ¶
Density	lbs/yd ³ g/cc	ASA-41
Water Holding Capacity (WHC)	g 100g as is	WEL method
Total Solids (alt. Moisture Content)	g 100g TS	MAP
Dewar Self-Heating	Tmax in °C	BGK; WEL
Man-Made Inerts, Plastic, Glass, metal	g 100g TS	CSU
Chemical Parameters		
pH, saturated paste	- log H	EPA 150.1; MAP
Volatile Organic Acids (VOA, VFA)	mg kg TS	SM 5560C / HPLC-UV
Cation Exchange Capacity (CEC)	cmol / kg	ASA 41-2.2
Conductivity (EC), saturated paste/slurry	dS m	MAP; BGK
Volatile Solids (VS) (Loss on Ignition)	VS dm	<i>modified</i> TMECC 03.02
Organic Matter (OM)	VS-TKN%	(LOI - Total-N)
Total Nitrogen (TN)	TKN% dm	Combustion ASTM, MAP
Ammonium Nitrogen (NH ₃ + NH ₄)	NH ₄ -N ppm	SM4500-NH3G
Nitrate and Nitrite Nitrogen	NO ₃ -N, NO ₂ -N ppm	MAP
P K Ca Na Mg Cl Fe Mn Cu Zn Cr Pb Cd Ni Al As B Hg Mo Se	mg kg TS mg kg TS	SM, MAP
Biological & Microbiological Parameters		
Respiration Rate (CO ₂ -Evolution)	CO ₂ -Cmg g TS day	BGK, ASA-SSSA
DRI-ASTM (Oxygen Consumption)	mg O ₂ g VS hr	ASTM-5975-96
Oxitop	mg O ₂ g VS 3d	CEN Draft
Solvita Test for CO ₂ -respiration and NH ₃ -volatilization**	0 - 8 CO ₂ 1 - 5 NH ₃	Approved in CA, CT, TX, FL, IL, ME, MN, NJ, NM OH, WA
<i>Salmonella</i> (EPA 503)	MPN 4g TS	EPA #1682
<i>Fecal Coliform</i> (EPA 503)	cfu g TS	EPA #1680
<i>E. coli</i>	MPN g TS	EPA 1680 + SM9221F
<i>E. coli</i> 0157:H7	MPN g TS	<i>modified</i> FDA BAM
<i>Fecal Streptococcus</i>	MPN g TS	SM9230B
<i>Clostridium perfringens</i>	cfu g TS	<i>modified</i> FDA BAM
<i>Listeria</i> spp.	MPN g TS	<i>modified</i> FDA BAM
Cress Test, Phytotoxicity	% of Fafard Control	OECD, ACSO, BGK
Disease Suppression	% inhibition	Hoitink, Krause et al.
Lemma spp. (Duckweed) Toxicity Test	% inhibition	<i>modified</i> after SM 8211-A.
Viable Weed Seeds	>0.8 / liter	BGK
Herbicide BioAssay	0 - 5 severity scale	Bull. Env. Contam. Tox., CSU 2006

TEST METHOD REFERENCES

AOAC - Official Methods of Analysis 17th Edition (2004) Official Fertilizer Tests	ASA-SSSA - Methods of Soil Analysis, American Society of Agronomy, Soil Sci. Soc., Madison WI
ASTM- American Society of Testing Methods, Philadelphia published on-line: <i>Biodegradability Tests, Stability tests</i>	BAM- Bacteriological Analysis Methods On-Line
ACSD - Association of Swiss Composters, Methods Manual (2003)	EPA-600 - Methods for Chemical Analysis of Water and Wastes. US EPA (RCRA)
BGK - Bundesgutgemeinschaft Kompost (Germany Compost Association) Test Methods Manual 1998; <i>Biological tests, Self-heating, Cress/Barley tests</i>	OECD - Guidelines for Seedling Emergence and Seedling Growth Test #208, phytotoxicity
MAP- Manure Methods of Analysis. NCR-13, Univ of Wisconsin A3769 (2003) <i>pH, salinity, minerals</i>	SW-846 - Test Methods for Evaluating Solid Waste USEPA 1987 (NPDES)
SM - Standard Methods for the Examination of Water & Wastewater, 20th ED. Water Env Federation. fatty acids, TDS, phytotoxicity, lemma toxicity	WEL - Woods End Laboratories Standard Operating Procedure Manual - Internal Document
TMECC- Test Methods for Examination of Compost. (2002-DRAFT) Privately published Industry manual from U.S.Compost Council	Peer Review journals: CSU - Compost Science Utilization; Bulletin Environmental Contamination and Toxicity